

AABP FACT SHEET

AN APPROACH TO CORKSCREW CLAW



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LAMENESS
COMMITTEE**

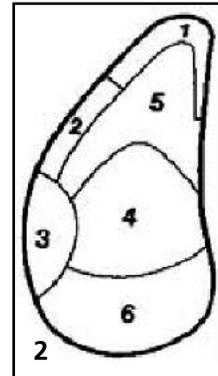
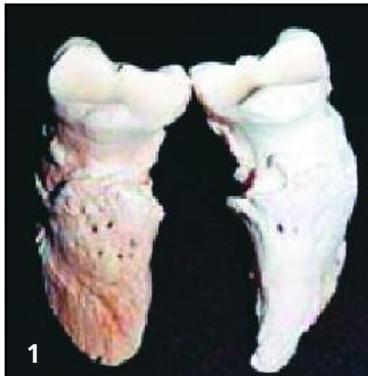
Description

Corkscrew Claw (CC) is observed most commonly in the lateral claws of the hind leg in cattle older than 3.5 years of age. The reported incidence of the condition may vary from 3% to 18%. It is reported to be a heritable misalignment of the second and third phalanges within the digit, although other factors such as claw disease, inappropriate claw care, nutrition and management may play a role.

Predisposing Factors

The third phalanx may have an abnormal structure including an abaxial curvature (**Figure 1**). This may lead to inappropriate weight bearing within the claw resulting in excessive weight distribution at the abaxial white line in Zones 1 & 2 (**Figure 2**). This may potentially result in lesions of the white line, which may become exposed during trimming (**Figure 3**).

Another significant predisposing factor for development of claw horn lesions in CC is overgrowth. It has been shown that growth rates of the mid and caudal wall are faster in cattle with CC as compared to those with normal claws resulting in overgrowth. This may predispose to lameness due to increased weight bearing (**Figure 4 & 5**). Lesions within the horn capsule associated with overgrowth include hemorrhage of the sole and white line, sole ulcers (Zone 4) and white line separation (Zone 3).



Figures 1-3. Abaxial curvature of P3 and white line lesions.

- Most common in lateral claws of hind leg.
- Usually bilateral
- Regarded as being a heritable trait. The use of animals as breeding stock showing characteristic signs of CC at a young age should be discouraged
- Leads to lameness due to overgrowth & inappropriate weight distribution within the claw.
- Secondary lesions including sole hemorrhage, sole ulceration and white line disease common.
- Characteristic abaxial to axial curvature of the wall with rotation of the toe.



Figure 4. Increased loading of the corkscrew claw.



Figure 5. Overgrowth of sole and wall at the toe.

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Corkscrew Claw *continued*

Clinical Signs

CC is characterized by the following abnormalities in claw conformation and growth:

1. Abaxial to axial displacement of the wall. The mid and caudal areas of the abaxial wall curve ventrally and can become part of the bearing surface of the claw (**Figure 6**).
2. Axial displacement of the sole and axial white line and rotation of the toe (**Figure 7**).
3. The toe and axial bearing surface becomes non-weight bearing. The sole and white line at the toe may be almost perpendicular to the weight-bearing surface (**Figure 7 & 8**). The

axial wall becomes displaced and a fold may develop in the axial wall (**Figure 8**).

4. The CC becomes overgrown compared to the opposite claw particularly at the heel and axial heel sole junction (**Figure 4 & 6**). In some instances the opposite claw may become virtually non-weight bearing and appears to undergo dis-



Figures 6-8. Abnormal curvature of the outer wall.

use atrophy. In such instances the other claw appears smaller, the sole appears sunken with a very marked slope towards the interdigital space and the abaxial wall shows little or no sign of wear (**Figure 5**).

Treatment

Corrective trimming of the CC may present a challenge particularly with regard to regaining balance between the two claws. The height difference between the two claws should be corrected, taking into account that anatomical abnormalities associated with CC may complicate this objective.

Corrective trimming procedures:

The Opposite Claw (OC):

The toe length of the OC is reduced to 3 inches (7.5 cm) in length for Holstein dairy cattle. In beef cattle the overgrown wall at the toe is removed. Use the white line as a guide if further reduction in toe length is deemed necessary. No further trimming of the OC claw should be done before completing steps 2-4.

The Corkscrew Claw (CC):

1. The toe length is reduced to the same length as that of the OC (**Figure 9**).
2. The upward deviation and rotation of the dorsal wall is removed (straightened) in order to align it with the dorsal wall of the OC. Full wall thickness may sometimes be exceeded during this procedure resulting in hemorrhage. Over thin-



Figure 9. Correcting toe length and balancing the bearing surfaces between claws.



Figure 10. Expansion of the bearing surface to improve stability.

ning of the dorsal wall in a small confined area usually does not result in any complications.

3. Balance the bearing surface including the heel of the CC with that of the OC (**Figure 9**). The wall is often very hard and hoof nippers or an angle grinder can facilitate trimming. Keep in mind that the corkscrew claw always has a higher heel. Do not lower the heel of the OC.
4. Slope the sole of the CC at the interdigital space. During this procedure, the fold in the axial wall is removed. The trimmed corkscrew claw will often have a small and narrow weight-bearing surface after trim-

ming is complete (**Figure 10**).

5. If enough sole horn thickness remains, both claws can now be further trimmed in order to increase the stability of the weight bearing surfaces.
6. Do corrective trimming on all lesions.

CC should be trimmed at 3-4 months intervals.

Differential Diagnoses

There are two claw capsule changes resembling corkscrew claw that need to be differentiated:

1. Claw rotation of the rear inner claw in heifers:

Abnormal growth of the abaxial wall of the medial hind claw has been observed in heifers. The abnormal growth is characterized by an abaxial to axial deviation of the abaxial wall and rotation of the toe. The medial claw is usually longer than the lateral.

2. Claw rotation of the front inner claw in cows (acquired corkscrew claw):

A very common condition seen in dairy cows kept in semi- and total-confinement housing shows axial rotation of the toe. The abaxial wall has an abaxial to axial curve, is somewhat overgrown and the sole is sloped towards the interdigital space. **AABP**